

# Missouri Childhood Lead Poisoning Prevention Program

**Annual Report for Fiscal Year 2012**

July 1, 2011 – June 30, 2012



**Missouri Department of Health and Senior Services**

**<http://health.mo.gov/living/environment/lead/index.php>**

**573-751-6102 or 866-628-9891**

# **Missouri Childhood Lead Poisoning Prevention Program (CLPPP)**

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This report meets the statutory mandate for an annual report per 701.343, RSMo.

# About Our Program

## PROGRAM MISSION

The Missouri Department of Health and Senior Services Childhood Lead Poisoning Prevention Program's (CLPPP) mission is to assure the children of Missouri a safe and healthy environment through primary prevention and the identification of lead exposures that may cause illness or death.

The Missouri Department of Health and Senior Services' (DHSS) Childhood Lead Poisoning Prevention Program (CLPPP) was established in 1993 and continues to assure that health care providers have current information and tools available to screen patients six years and younger for lead and provide primary prevention education.

The Childhood Lead Poisoning Prevention Program is staffed by the following positions: A Program Manager, a Health Educator, a Surveillance Coordinator, two Data Entry Personnel, two Environmental Specialists and two Case Management Nurses.

State guidelines describe appropriate follow-up of children with elevated blood lead levels (EBL) of at least ten micrograms per deciliter (10 µg/dL). The level of concern recommended by the Centers for Disease Control and Prevention (CDC) previously was  $\geq 10$  µg/dL. As of January 2012, CDC established a lower reference value of  $\geq 5$  µg/dL. Through the remainder of FY2012, and to current, CLPPP has been working with partners to identify ways to implement CDC's new recommendation.

Follow-up activities and case management are generally provided for children six years and younger with an EBL  $\geq 10$  µg/dL. These activities help the family understand the causes and health effects of childhood lead poisoning. Environmental risk assessments are conducted to identify potential sources of lead exposure for children with an EBL  $\geq 15$  µg/dL using CLPPP funding. These risk assessments provide the family with information about where lead hazards exist in and around their home. A work plan is developed to reduce these hazards and the risks associated with them. By reducing or eliminating exposures to the environmental sources of lead, the child's blood lead level should decrease and repeated elevations should be prevented. (Note: Children who receive MO HealthNet benefits must have received two lead tests results of 15 µg/dL or greater at least three months apart for MO HealthNet (Medicaid) to pay for the environmental risk assessment.)

Lead poisoning prevention educational materials are developed and provided to Missouri citizens at various community venues. DHSS works with Local Public Health Agencies (LPHAs), the medical community, other state agencies, businesses, schools and community organizations to prevent childhood lead poisoning. The Missouri CLPPP created a mascot to promote lead poisoning prevention messages. The costume may be loaned to any organization in Missouri wanting to increase lead poisoning prevention education and blood lead testing.

The program currently uses the Missouri Health Strategic Architectures and Information Cooperative (MOHSAIC) database to collect lead-specific data from medical and lead program activities pertaining to children under the age of six years. This database is part of a tracking system to provide documentation of medical testing, case management and environmental risk

assessments statewide. The data is used to provide comprehensive lead case management services and for statistical information. All child and adult lead test information is tracked in MOHSAIC.

## **Lead Poisoning in Missouri**

Lead poisoning is one of the most common and preventable environmental health problems today. Almost a quarter million children in the United States are estimated to have elevated blood lead levels of at least 10 µg/dL. According to Missouri blood lead testing data for July 1, 2011 through June 30, 2012, there were 728 children under the age of six identified with elevated blood lead levels of at least 10 µg/dL (0.78 percent of the 92,920 children tested that year).

The primary lead hazard to children in Missouri is deteriorated lead-based paint. Lead-based paint was banned for residential use nationwide in 1978. Any home built before 1978 may contain leaded paint. The highest risk of lead exposure for children is found in homes built before 1950, when most paint contained a high percentage of lead. More than 21 percent of the housing stock in Missouri was built before 1950 (see page 5).

Lead mining and smelting are an important part of Missouri's history. Lead in Missouri was first discovered along the Meramec River by French explorers in the 1700s while searching for gold and silver. Missouri became the dominant lead-producing state in the nation in 1907. It has remained so ever since. Most early lead production came from the Old Lead Belt district of southeast Missouri in the Park Hills-Bonne Terre area, and in the Tri-State Zinc-Lead district in southwest Missouri around Joplin. Today, all of the state's lead production comes from the New Lead Belt, also known as the Viburnum Trend district. This district is a very narrow, 35-mile-long ore area extending southward from the small town of Viburnum, Iron County, in southeast Missouri. Mining waste products in these areas often end up on driveways, in yards, or even in children's play areas. Dust, air and soil around mining activity have consistently shown elevated levels of lead contamination.

Lead is a shiny, silver-colored metal found naturally in the earth's crust. Lead has historically been used in a variety of ways including in paints, gasoline, batteries, bullets and some vinyl products such as mini-blinds. Fine particles of processed or recycled lead and/or lead dust become a health hazard when they are taken into the body through inhalation (breathing) and/or ingestion (swallowing).

Lead affects almost every organ and system in the body. The effects are the same whether it is breathed or swallowed. Lead damages the brain, central nervous system, kidneys and immune system. Lead in the human body is most harmful to young children under six years of age. It is especially detrimental to children less than three years of age because their systems are developing rapidly.

A blood test is used to determine lead levels. Lead can be measured in blood drawn from a vein or capillary (finger stick). Blood lead levels are measured and reported as micrograms of lead per deciliter of whole blood (µg/dL).

# Statewide Screening Plan

Legislation passed in 2001 required DHSS to promulgate rules and regulations to establish a statewide screening plan. The rules and regulations define criteria for establishing geographic areas in the state considered to be at higher risk for lead poisoning, outline blood lead testing requirements and protocols, and define lead testing follow-up.

In developing these regulations, CLPPP applied Missouri surveillance and census data to establish criteria for Universal Testing (high risk) and Targeted Testing (non-high risk) areas in Missouri. Based upon those criteria, and as required by state statute, the following activities shall occur in these two areas.

## **In Universal Testing Areas:**

- Any child under the age of six living in or visiting for more than 10 hours per week in the Universal Testing or high risk area will be tested annually for lead.
- Childcare facilities located in Universal Testing Areas must record a “proof of lead testing” signed by the health care provider within 30 days of the child’s enrollment. The statement must verify that a blood lead test was completed in the previous 12 months. If the parent/guardian does not provide proof or a written statement explaining why they do not want the child tested, the childcare facility is to offer the parent assistance in scheduling a blood lead test.

## **In Targeted Testing Areas the following activities shall occur:**

- From six months to six years of age, every child will be screened annually, by verbal risk assessment,\* to determine whether they are at high risk for lead poisoning. Risk assessments may indicate the need for blood lead testing at an earlier age (6 months) and/or more frequently.

\*The form used for the verbal risk assessment is the Healthy Children and Youth (HCY) Lead Risk Assessment Guide

<http://health.mo.gov/living/environment/lead/pdf/HCYLeadRiskAssessmentGuide.pdf> .

- Every child less than age six found to be at high risk will be tested for lead poisoning.
- All MO HealthNet eligible children shall be assessed by the HCY Lead Risk Assessment Guide questionnaire and/or be blood lead tested at the ages stipulated by the Federal Program Guidelines (12 months of age, 24 months of age, or 12 to 72 months of age).

An updated Missouri Lead Testing Areas map is published every year and is available at:  
[health.mo.gov/living/environment/lead/maps.php](http://health.mo.gov/living/environment/lead/maps.php)

# Reporting of Blood Lead Testing

Missouri's diseases and conditions reporting rule ([19 CSR 20-20.020](#)) requires reporting of all blood lead tests both elevated and non-elevated and clarifies demographic patient information required to be submitted with the report. All blood lead test results are required to be reported to the DHSS regardless of the age of the individual or the reported lead level. The data contributes to Missouri's local, regional and statewide statistics on blood lead poisoning.

The following information is required:

- Test conducted
- Results of the test
- Name and address of the attending physician
- Name of the disease or condition diagnosed or suspected
- Date the test results were obtained
- Patient's complete name and home address with zip code
- Patient's age and date of birth
- Patient's sex and race

Health care providers should assure that the laboratory they are using is reporting to DHSS.

## LeadCare Analyzers

LeadCare Analyzers are portable and easy-to-use instruments that give results of capillary blood lead samples within minutes. These devices allow the patient to receive a result immediately from the tester. LeadCare Analyzers are very convenient for physicians' offices and local health departments. These devices:

- Prevent the patient from possibly being referred to an entirely different location to have the test done.
- Save time that would be spent waiting on lab results.

The use of these instruments has increased for both providers and local public health agencies.

## Filter Paper Blood Lead Testing

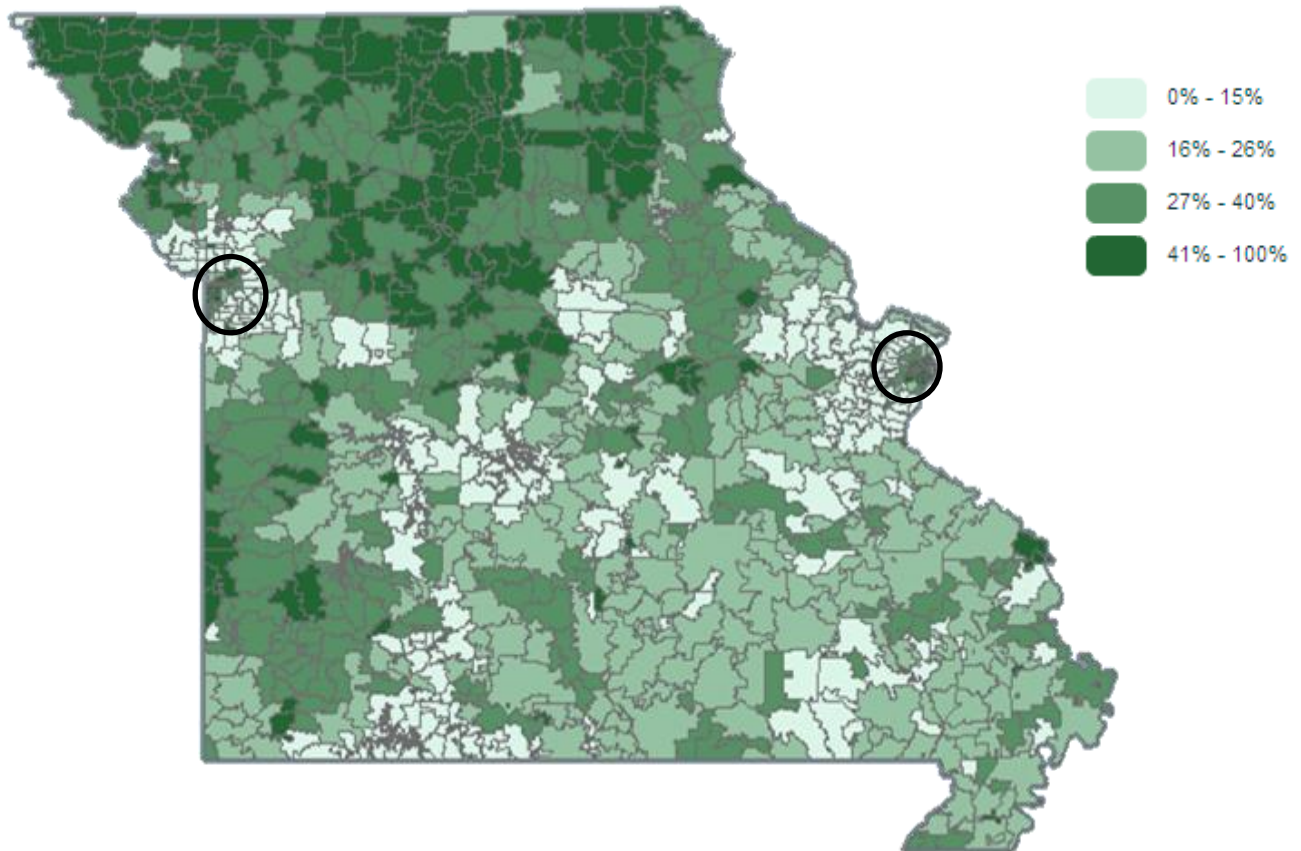
Filter Paper techniques are acceptable for blood lead testing if health care providers ensure that, as with all blood lead test methods, the chosen laboratory is participating satisfactorily in Clinical Laboratory Improvement Amendments (CLIA) certified proficiency testing (PT) program. Technical assistance is available by contacting the nurse in the DHSS Childhood Lead Poisoning Prevention Program at 573-751-6102.



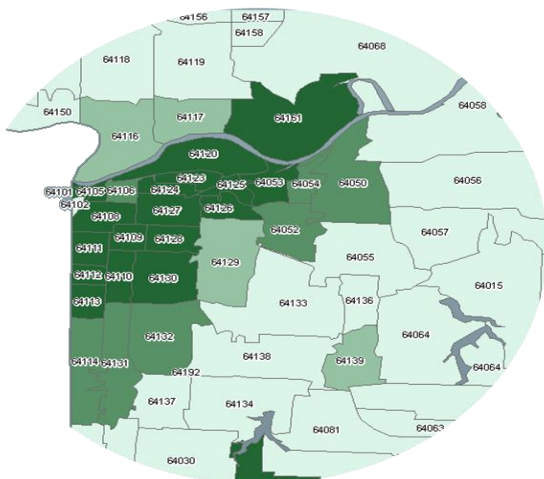
# Housing Risks

Nationally, the average percentage of housing built pre-1950 decreased from 22% in 2000 to 19.6 % in 2010. Missouri is above the national average with 21% of housing units built before 1950. The map below lists the percentage of pre-1950 housing by zip code according to 2000 census data.

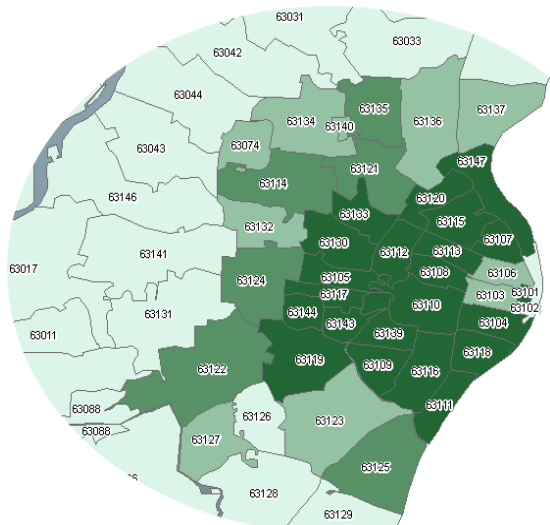
**Percent of Missouri Pre-1950 Housing by Zip Code**



**Kansas City**



**St. Louis**



# Testing and Prevalence

The number of Missouri's children less than six years old who have been tested for lead poisoning has increased from 50,362 in 2000 to 92,920 in 2012. Of the children tested, the percentage found to have elevated blood lead levels (10 µg/dL or greater) has declined from 11.1 percent in 2000 to 0.78 percent in 2012. This decrease mirrors a nationwide decrease in children's blood lead levels. In 2012, of the 92,920 children in Missouri who received a blood lead test, 728 had blood lead levels 10 µg/dL or greater.

## Highlights from the FY 2012 testing data

- There were 92,920 children tested for lead during 2012.
- Approximately 31% of children tested in the Universal Testing Areas in 2012 (20,394 of an estimated 64,083 children under age 6 in Universal Testing Areas).
- The number of children found to have an EBL greater than or equal to 10 µg/dL decreased from 5,588 in 2000 to 728 in 2012.
- Of children tested in Missouri, 0.78 percent had an elevated blood lead level of at least 10 µg/dL.
- 4,672 children tested had blood lead levels between 5 and 9.9 µg/dL.

A summary of county level blood lead testing data for the period July 1, 2011 through June 30, 2012 is presented on the following pages.



**Blood Lead Testing Data by County**  
**For the period of July 1, 2011 through June 30, 2012 for Children Less Than Six Years of Age**

Jurisdiction	Blood Lead Level Test Results (ug/dl)										Total Count All Tests	2010 Census Population of Children <72 months	Percent of Total Population (<72 months) Tested	Total Count Tests ≥ 10	Percent Total Tested ≥ 10
	0-2.9	3-4.9	5-9.9	Total Tests <10	10-14.9	15-19.9	20-24.9	25-44.9	45-69.9	≥ 70					
ADAIR	244	50	13	307	1	0	0	0	0	0	308	1,715	17.96%	1	0.32%
ANDREW	118	10	14	142	0	1	0	0	0	0	143	1,217	11.75%	1	0.70%
ATCHISON	32	13	8	53	1	0	0	0	0	0	54	362	14.92%	1	1.85%
AUDRAIN	380	49	14	443	2	1	0	0	0	0	446	2,063	21.62%	3	0.67%
BARRY	294	53	13	360	0	0	1	0	0	0	361	2,726	13.24%	1	0.28%
BARTON	88	25	11	124	0	0	0	0	0	0	124	997	12.44%	0	0.00%
BATES	303	32	12	347	1	2	0	0	0	0	350	1,369	25.57%	3	0.86%
BENTON	129	17	6	152	0	0	0	0	0	0	152	1,001	15.18%	0	0.00%
BOLLINGER	161	35	7	203	0	0	0	0	0	0	203	907	22.38%	0	0.00%
BOONE	1965	81	23	2,069	0	0	0	0	0	0	2,069	12,126	17.06%	0	0.00%
BUCHANAN	957	199	144	1,300	15	6	6	3	0	0	1,330	7,321	18.17%	30	2.26%
BUTLER	541	121	24	686	1	2	0	1	0	0	690	3,369	20.48%	4	0.58%
CALDWELL	81	19	15	115	0	1	0	1	0	0	117	722	16.20%	2	1.71%
CALLAWAY	393	45	21	459	0	1	0	0	0	0	460	3,169	14.52%	1	0.22%
CAMDEN	191	31	7	229	0	0	0	0	0	0	229	2,610	8.77%	0	0.00%
CAPE GIRARDEAU	579	98	53	730	4	1	0	1	0	0	736	5,638	13.05%	6	0.82%
CARROLL	174	25	26	225	3	0	1	1	1	0	231	634	36.44%	6	2.60%
CARTER	75	10	3	88	0	0	0	0	0	0	88	515	17.09%	0	0.00%
CASS	952	87	15	1,054	1	0	0	0	0	0	1,055	8,174	12.91%	1	0.09%
CEDAR	93	19	8	120	0	0	0	0	0	0	120	1,002	11.98%	0	0.00%
CHARITON	89	18	6	113	0	0	0	0	0	0	113	575	19.65%	0	0.00%
CHRISTIAN	873	61	14	948	2	0	0	1	0	0	951	7,017	13.55%	3	0.32%
CLARK	83	12	10	105	0	0	0	0	0	0	105	577	18.20%	0	0.00%
CLAY	688	60	17	765	1	0	0	0	0	0	766	19,570	3.91%	1	0.13%
CLINTON	168	25	11	204	0	0	0	0	0	0	204	1,569	13.00%	0	0.00%
COLE	632	134	63	829	2	2	1	0	0	0	834	6,099	13.67%	5	0.60%
COOPER	178	35	12	225	0	0	1	0	0	0	226	1,291	17.51%	1	0.44%
CRAWFORD	256	49	16	321	1	3	0	0	0	0	325	2,000	16.25%	4	1.23%
DADE	56	12	4	72	0	0	0	0	0	0	72	494	14.57%	0	0.00%
DALLAS	119	20	6	145	1	0	0	0	0	0	146	1,368	10.67%	1	0.68%
DAVIESS	71	19	2	92	0	0	0	0	0	0	92	757	12.15%	0	0.00%
DEKALB	91	13	9	113	0	0	0	0	0	0	113	706	16.01%	0	0.00%
DENT	199	47	20	266	0	1	0	0	0	0	267	1,145	23.32%	1	0.37%
DOUGLAS	274	25	10	309	1	0	0	0	0	0	310	983	31.54%	1	0.32%
DUNKLIN	471	76	19	566	2	1	0	0	0	0	569	2,640	21.55%	3	0.53%

FRANKLIN	951	92	29	1,072	2	0	0	1	0	0	1,075	7,862	13.67%	3	0.28%
GASCONADE	161	37	14	212	1	0	0	0	0	0	213	1,009	21.11%	1	0.47%
GENTRY	80	23	16	119	1	0	0	0	0	0	120	542	22.14%	1	0.83%
GREENE	2937	297	87	3,321	5	2	3	3	0	0	3,334	20,451	16.30%	13	0.39%
GRUNDY	119	24	16	159	1	0	0	0	0	0	160	853	18.76%	1	0.63%
HARRISON	132	20	14	166	2	0	0	0	0	0	168	781	21.51%	2	1.19%
HENRY	276	43	12	331	4	1	0	0	0	0	336	1,583	21.23%	5	1.49%
HICKORY	66	19	7	92	0	0	0	0	0	0	92	535	17.20%	0	0.00%
HOLT	67	13	14	94	0	0	0	0	0	0	94	336	27.98%	0	0.00%
HOWARD	169	37	19	225	1	1	0	0	0	0	227	732	31.01%	2	0.88%
HOWELL	234	210	18	462	0	0	0	0	0	0	462	3,389	13.63%	0	0.00%
IRON	187	80	46	313	6	1	0	1	0	0	321	742	43.26%	8	2.49%
JACKSON	2641	3125	102	5,868	5	2	2	0	0	0	5,877	16,328	35.99%	9	0.15%
JASPER	1759	458	246	2,463	21	7	5	1	0	0	2,497	10,727	23.28%	34	1.36%
JEFFERSON	1708	150	40	1,898	8	1	0	1	0	0	1,908	18,009	10.59%	10	0.52%
JOHNSON	360	77	31	468	3	1	0	0	0	0	472	4,267	11.06%	4	0.85%
KANSAS CITY	7737	1275	333	9,345	47	15	6	7	1	0	9,421	40,849	23.06%	76	0.81%
KNOX	56	15	8	79	1	0	0	0	0	0	80	323	24.77%	1	1.25%
LACLEDE	439	55	8	502	0	0	0	0	0	0	502	3,029	16.57%	0	0.00%
LAFAYETTE	193	243	12	448	2	1	0	0	0	0	451	2,511	17.96%	3	0.67%
LAWRENCE	439	90	35	564	0	3	1	0	0	0	568	3,220	17.64%	4	0.70%
LEWIS	87	35	4	126	0	0	0	0	0	0	126	762	16.54%	0	0.00%
LINCOLN	515	54	13	582	1	0	0	0	0	0	583	4,892	11.92%	1	0.17%
LINN	99	20	7	126	1	0	0	0	0	0	127	1,009	12.59%	1	0.79%
LIVINGSTON	221	29	26	276	1	0	0	0	0	0	277	1,127	24.58%	1	0.36%
MACON	225	42	14	281	1	0	1	1	0	0	284	1,266	22.43%	3	1.06%
MADISON	198	45	17	260	1	0	1	0	0	0	262	956	27.41%	2	0.76%
MARIES	73	21	3	97	0	0	0	0	0	0	97	680	14.26%	0	0.00%
MARION	515	82	29	626	4	3	1	1	0	0	635	2,373	26.76%	9	1.42%
MCDONALD	317	57	17	391	0	0	0	0	0	0	391	2,022	19.34%	0	0.00%
MERCER	4	50	5	59	0	0	0	0	0	0	59	314	18.79%	0	0.00%
MILLER	204	25	5	234	1	0	0	0	0	0	235	1,932	12.16%	1	0.43%
MISSISSIPPI	358	62	40	460	3	1	0	0	0	0	464	1,084	42.80%	4	0.86%
MONITEAU	145	22	12	179	2	1	0	1	0	0	183	1,306	14.01%	4	2.19%
MONROE	108	6	5	119	0	0	0	0	0	0	119	658	18.09%	0	0.00%
MONTGOMERY	196	64	29	289	0	0	0	0	0	0	289	920	31.41%	0	0.00%
MORGAN	133	16	9	158	0	0	0	0	0	0	158	1,503	10.51%	0	0.00%
NEW MADRID	304	34	7	345	0	0	0	0	0	0	345	1,507	22.89%	0	0.00%
NEWTON	732	153	88	973	1	0	0	0	0	0	974	4,638	21.00%	1	0.10%
NODAWAY	136	24	10	170	0	0	0	0	0	0	170	1,479	11.49%	0	0.00%
OREGON	130	62	20	212	0	0	0	0	0	0	212	736	28.80%	0	0.00%
OSAGE	98	26	13	137	0	1	0	0	0	0	138	1,095	12.60%	1	0.72%
OZARK	87	35	6	128	0	0	0	0	0	0	128	601	21.30%	0	0.00%

PEMISCOT	223	38	15	276	2	0	0	0	0	0	278	1,674	16.61%	2	0.72%
PERRY	98	3	3	104	0	0	0	0	0	0	104	1,533	6.78%	0	0.00%
PETTIS	656	111	65	832	3	2	1	0	0	0	838	3,739	22.41%	6	0.72%
PHELPS	700	72	14	786	3	1	0	0	0	0	790	3,326	23.75%	4	0.51%
PIKE	170	20	21	211	1	0	0	0	0	0	212	1,349	15.72%	1	0.47%
PLATTE	360	19	5	384	0	0	0	0	0	0	384	6,855	5.60%	0	0.00%
POLK	393	83	23	499	2	1	0	0	0	0	502	2,402	20.90%	3	0.60%
PULASKI	400	39	6	445	0	0	0	0	0	0	445	4,660	9.55%	0	0.00%
PUTNAM	64	12	2	78	0	1	1	0	0	0	80	371	21.56%	2	2.50%
RALLS	128	21	5	154	0	0	0	0	0	0	154	768	20.05%	0	0.00%
RANDOLPH	269	71	43	383	5	1	1	0	0	0	390	1,921	20.30%	7	1.79%
RAY	384	37	27	448	0	0	0	0	0	0	448	1,735	25.82%	0	0.00%
REYNOLDS	56	26	14	96	2	1	0	0	0	0	99	476	20.80%	3	3.03%
RIPLEY	158	30	7	195	1	1	0	0	0	0	197	991	19.88%	2	1.02%
SALINE	342	92	22	456	5	1	0	0	0	0	462	1,781	25.94%	6	1.30%
SCHUYLER	65	19	7	91	1	0	0	0	0	0	92	344	26.74%	1	1.09%
SCOTLAND	35	25	5	65	0	0	0	0	0	0	65	470	13.83%	0	0.00%
SCOTT	635	71	14	720	1	1	0	0	1	0	723	3,304	21.88%	3	0.41%
SHANNON	49	21	6	76	1	0	0	0	0	0	77	638	12.07%	1	1.30%
SHELBY	131	20	18	169	4	1	0	0	0	0	174	519	33.53%	5	2.87%
ST CHARLES	2397	101	41	2,539	2	0	0	0	0	0	2,541	29,474	8.62%	2	0.08%
ST CLAIR	50	12	4	66	0	0	0	0	0	0	66	585	11.28%	0	0.00%
ST FRANCOIS	697	201	96	994	13	2	0	0	0	0	1,009	4,811	20.97%	15	1.49%
ST LOUIS CO	14197	1372	468	16,037	39	10	6	5	0	0	16,097	70,993	22.67%	60	0.37%
ST LOUIS CITY	9608	2630	1424	13,662	191	58	25	26	2	1	13,965	24,645	56.66%	303	2.17%
STE GENEVIEVE	231	37	12	280	1	0	0	0	0	0	281	1,239	22.68%	1	0.36%
STODDARD	434	48	7	489	0	0	0	0	0	0	489	2,171	22.52%	0	0.00%
STONE	225	26	16	267	0	0	0	0	0	0	267	1,694	15.76%	0	0.00%
SULLIVAN	179	20	12	211	1	0	0	0	0	0	212	528	40.15%	1	0.47%
TANEY	491	25	4	520	0	0	0	0	0	0	520	3,754	13.85%	0	0.00%
TEXAS	177	32	9	218	0	0	0	0	0	0	218	1,911	11.41%	0	0.00%
VERNON	148	47	17	212	2	1	0	1	0	0	216	1,754	12.31%	4	1.85%
WARREN	337	51	28	416	3	2	0	0	0	0	421	2,746	15.33%	5	1.19%
WASHINGTON	206	89	32	327	3	0	0	0	0	0	330	1,967	16.78%	3	0.91%
WAYNE	107	20	6	133	0	0	0	0	0	0	133	858	15.50%	0	0.00%
WEBSTER	274	37	17	328	0	0	0	1	0	0	329	3,219	10.22%	1	0.30%
WORTH	20	5	4	29	0	0	0	0	0	0	29	124	23.39%	0	0.00%
WRIGHT	250	27	11	288	1	0	1	0	0	0	290	1,569	18.48%	2	0.69%
<b>Grand Total</b>	<b>72938</b>	<b>14582</b>	<b>4672</b>	<b>92,192</b>	<b>452</b>	<b>147</b>	<b>65</b>	<b>58</b>	<b>5</b>	<b>1</b>	<b>92,920</b>	<b>468,264</b>	<b>19.84%</b>	<b>728</b>	<b>0.78%</b>

Data Notes:

-This table subtracts the full Kansas city population from Jackson county

# Activities Funded by the CLPPP Cooperative Agreement

## Contracts

St. Louis City, St. Louis County and Kansas City are Missouri's three largest metropolitan areas. According to 2010 census data and 2012 surveillance data, these three areas combined contain 60 % of Missouri's children with elevated blood lead levels (439 of 728). To decrease the prevalence of EBL's in these areas, DHSS contracts with LPHAs to provide lead poisoning prevention educational activities, assure case management, and provide environmental risk assessments.

Environmental contracts were established for nine regions of the state to assure that children with an EBL receive an accurate and timely environmental risk assessment. These contracts provide EBL risk assessments for 47 of the 114 counties and the city of St. Louis. DHSS Environmental Specialists provide EBL risk assessments in the remaining counties. Establishing regional contracts resulted in more complete and timely compliance with the conducting and reporting of risk assessments. Under the contracts, data is collected to track compliance with remediation recommendations.

## Lead Poisoning Prevention Education

CLPPP develops an educational campaign and distributes materials to advocates statewide each year. The campaign goal is to provide stakeholders with the tools necessary to promote lead poisoning prevention. Themes, fact sheets, posters and public service announcements are examples of campaign materials. The materials are used during lead poisoning prevention month to intensify the statewide effort. The *Lead-Free Kids for a Healthy Future* campaign flyers and posters were distributed to stakeholders statewide in 2011 and are archived on the CLPPP website:

<http://health.mo.gov/living/environment/lead/index.php>.

CLPPP also develops and distributes a newsletter each year for local and state partners. The NewsLEADER contains resource information such as new publications available, websites and tips for successful public outreach. Stakeholders are encouraged to share their lead poisoning prevention activities and ideas. Several educational brochures and fact sheets that focus on specific lead related issues such as *Pregnancy and Lead Poisoning* and *A Health Care Provider's Guide to Lead Screening and Testing Requirements* are also available and can be ordered for community-wide use.

Educational materials are also available and displayed at health fairs, home shows, blood lead testing events and other public events when possible. Display boards provide visitors with lead poisoning prevention posters, signs, facts and other educational materials. The display boards are helpful to capture people's attention and draw them in to learn about other healthy homes topics such as radon and mold.

Lead Poisoning Prevention Week (observed in October) campaign information, newsletters, fact sheets, booklets and other publications are all available to the public on the CLPPP webpage.

The webpage also features: upcoming events, lead testing guidelines, Missouri lead testing maps, product recalls, data and statistical reports, laws, regulations and manuals.

# Collaborations

## Case Management Services

Case management of children with elevated blood lead levels involves coordinating, providing and overseeing the services required to help reduce the child's blood lead level. During FY2012, case managers strived to reduce EBL levels to less than 10 µg/dL. It is based on the efforts of an organized team and is child, physician and family centered. Lead case management services may be provided by the child's primary care physician, LPHA, a MO HealthNet Managed Care health plan, or another contracted agency. At times, other disciplines such as behavioral health are part of the case management system. In some cases interpretive services may be indicated and these individuals will also interact with lead case managers. DHSS Healthy Indoor Environments and Childhood Lead Poisoning staff along with MO HealthNet staff monitor case management for children identified with a blood lead level greater than or equal to 10 µg/dL. The MOHSAIC system is used to provide a centralized documented record of communications as well as case management interventions and updated demographic information. Risk assessment reports are also accessible to team members if the child's blood lead level was 15µg/dL or greater. This promotes increased information for consistency in sharing the findings and promoting unified support of suggested interventions made by the risk assessors following environmental investigation results.

## Environmental Services

The Missouri Public Health System provides lead risk assessment services to detect hazardous sources of lead exposure in children's homes. This service is provided for children age six and younger who have a confirmed venous blood lead level of 15µg/dL or greater.

A risk assessment is conducted by a professional trained and licensed by the DHSS Lead Licensing Program. The assessor consults with the child's family to determine areas of the home where the child may come into contact with lead. X-ray Fluorescence Analyzers (XRF's) are used to analyze painted surfaces and household objects such as toys and mini-blinds. Dust, soil and water samples are collected to determine if and where lead hazards exist. Upon completing the assessment and receiving the lab analysis, the risk assessor provides the property owner and/or occupant (if other than the owner) with recommendations for reducing lead hazards. The risk assessor revisits the home at an agreed-upon time to assure lead hazard reduction has been accomplished. The risk assessor collaborates with the child's parent or legal guardian, property owner, LPHA or MO HealthNet lead case manager, DHSS CLPPP staff, and the child's physician as indicated, as part of their role in case management of the elevated child.

## Healthy Homes

Since the beginning of the "Is Your Home Healthy?" exhibit in 2007, the exhibit has been adapted for use at a variety of events throughout the state. The main exhibit focuses on the Healthy Indoor Environments unit in the Bureau of Environmental Epidemiology. The primary programs highlighted are the Childhood Lead Poisoning Prevention Program and the Indoor Air/Radon Program. Information is available on a variety of topics including lead poisoning prevention, radon and mold remediation, the fish consumption advisory, asbestos-containing vermiculite insulation, carbon monoxide poisoning prevention, heat and cold illness prevention, mercury handling and disposal, and other environmental health topics as appropriate for the event and audience. Coloring and activity books, magnets and stickers are available to capture the interest

of guardians and children. Employees from the various programs staff the exhibit and are available to answer questions about environmental health concerns from citizens. The exhibit also features hand washing information from the Bureau of Communicable Disease Control and Prevention and tick and mosquito repellent information from the Vector Borne Disease Program.

Between July 1, 2011 and June 30, 2012, “Is Your Home Healthy?” was displayed at 21 different venues across the state. These included the new Local Public Health Administrators training, St. Louis and Jefferson City Home Builders Association Home Shows, Green Building Conference, Missouri Milk Food and Environmental Health Association Conference, Missouri School Nurse Conference, Missouri Educator Conferences, Parents as Teachers Conference, school and community health fairs and corporate employee health fairs.

The “Is Your Home Healthy?” exhibit is an ongoing collaborative effort between Bureau of Environmental Epidemiology programs, the Bureau of Communicable Disease Control and Prevention, the Vector Borne Disease Program, and the local health departments. This outreach effort continues to help build partnerships with outside organizations such as Parents as Teachers, child advocates, school nurses, contractors, environmental health professionals, senior citizen groups and parents. At the same time, it provides valuable information to and helps educate the citizens of Missouri about environmental hazards in their homes.

### **Agency for Toxic Substance and Disease Registry (ATSDR)/Environmental Protection Agency (EPA)/Missouri Department of Natural Resources (MDNR)**

Lead mining, milling and smelting has occurred throughout the lower half of Missouri. Missouri ranks as the top lead-producing state in the nation. Across the state, there are 60 counties that are potentially impacted by lead mining-related activities.

Historical lead mining, milling and processing has resulted in innumerable tons and acres of waste products, such as tailings and chat. Over time, tailings and chat have migrated into the surrounding communities. The migration has been caused by wind or water erosion, as well as from human activities, such as using the lead waste as fill material in yards, driveways and sandboxes or using the chat for traction along roads in winter. Because of the lead mine waste and the resulting contamination into nearby communities, Missouri has many sites placed on the Environmental Protection Agency (EPA) National Priorities List (NPL) for remediation. In St. Francois County, six large mine tailings and chat piles from past mining and milling operations are located near residential areas. Other major lead mining sites that have been placed on the NPL due to residential contamination include Madison and Jefferson counties; sites in Newton, Jasper and Iron counties; and four NPL sites in Washington County. In addition, there is an active lead smelter in Herculaneum, Missouri. The smelter processes lead concentrate from active mining and milling operations in nearby counties into lead ingots for use in consumer products like batteries and computers. Lead contamination resulting from the smelter operations is also being addressed in the community of Herculaneum.

DHSS, along with other state, local and federal agencies (including ATSDR, EPA, and DNR), is addressing these sites to protect public health. Multiple actions have been taken to reduce human exposure and prevent lead poisoning, especially to children less than six years old. Some of the actions taken by partnering agencies at the various sites to reduce exposure include monitoring of air, sampling of soil, water and dust, stabilization of the tailings piles, yard soil removals, street cleanings, interior home cleaning, reduction in smelter air emissions, and special blood lead



testing events. Additional activities conducted by DHSS include health studies, health consultations, public health assessments, and ongoing educational activities.

### **Brownfield Project**

Vast areas of Missouri may have high levels of lead in soil and/or groundwater due to naturally occurring lead deposits and from past and present lead mining and production. Given the recent rapid expansion of urban sprawl, many previously undeveloped properties are now being looked at by developers for residential housing and other types of increased land use. Development of this nature on mining-impacted lands potentially exposes new populations to lead and other heavy metal contaminants.

Under a grant from ATSDR, DHSS is developing a guide for Missouri communities to increase awareness and to encourage consistency among local governments in addressing public health implications associated with reuse and redevelopment of areas with potential mining contamination.

As another part of this project, DHSS has undertaken efforts to increase testing for lead in drinking water by working with the State Public Health Laboratory to add lead to its list of analytes included in the New Well Series for private drinking water supplies and by recommending actions that local public health agencies can take to increase testing. DHSS has also developed new health education materials to promote water testing for lead. To assist in responding to homeowner concerns for those identified with lead impacts to their drinking water system, a lead in drinking water fact sheet has been developed that can be provided along with test results with recommendations for reducing exposure. These health education materials can be found at the following DHSS web site:

<http://health.mo.gov/living/environment/lead/publications.php#gov>

### **DHSS Lead Licensing Program**

The Lead Licensing Program is responsible for licensing individuals to conduct lead abatement, inspections and risk assessments. Employees of this section may make unannounced site visits to check that all individuals have the proper current license and also that lead abatement is being conducted correctly and safely. This is to ensure the safety of the residents who may not know the harmful effects of improper lead abatement work practices. Like CLPPP, the Lead Licensing Program plays an important role in keeping people healthy and safe from lead poisoning. All risk assessors that are a part of CLPPP are licensed and overseen by the Lead Licensing Program.

### **Missouri Department of Social Services (MDSS), MO HealthNet Division (MHD)**

Poverty is one major risk factor for lead poisoning. DHSS and MHD have had a cooperative agreement in place since 1998. This agreement outlines the agencies' mutual objectives regarding childhood lead poisoning to: 1) assure that MO HealthNet eligible children are screened/tested according to the Statewide Lead Testing Plan; and 2) assure that medically necessary services are provided for MO HealthNet eligible children whether by a MO HealthNet enrolled provider or MO HealthNet Managed Care health plan for the correction or amelioration of lead poisoning-related conditions identified through a full or partial Early Periodic Screening Diagnosis and Treatment. During FY2012, MO HealthNet staff assessed the current MO HealthNet status of all Missouri children with confirmed blood lead levels 10 µg/dL or greater. MO HealthNet staff generates a health plan specific report of elevated health plan members that is forwarded to each health plan lead case manager for case management of the elevation. Lead case management activities for these elevated health plan children are documented by the health plan lead case managers, directly into the MOHSAIC Lead Case Management Application. This

documentation helps to facilitate greater and timelier communication regarding follow up of elevated children among the MO HealthNet Managed Care health plans, Mo HealthNet Division, DHSS and the LPHAs. DHSS staff representation on the Central Area Headstart Advisory Committee provides opportunities for education and outreach regarding lead poisoning awareness and prevention activities in the community as well.

### **Women, Infant, and Children (WIC) Program**

High blood lead levels that affect intelligence, behavior and the development of children less than six years of age disproportionately affect minority and poor children. The Special Supplemental Nutrition Program for WIC is an important partner in efforts to combat the health risks of lead poisoning. By identifying high-risk children through a screening process during WIC clinic visits, referring children to their primary care provider for testing, or making blood lead testing available on-site, the likelihood that more children will be blood lead tested is improved. This practice also helps to identify elevated children, as well as initiate timely and appropriate follow-up care.

### **Missouri Department of Economic Development (DED)**

The Missouri Department of Economic Development FY 2008-2012 Consolidated Plan produced by DED includes Targeted and Universal Testing Area maps, blood lead testing data by county, and percentage of pre-1950 housing data for the state. The document also contains the Missouri Housing Development Commission's lead-based paint policies and procedures and the HOME Repair (HERO) Program's and HOME Rental Production Program's lead-based paint reference guide.

### **Missouri Local Public Health Agencies (LPHA's)**

Many LPHA's offer blood lead testing within their counties. Some agencies offer free blood lead testing or referrals to providers that offer testing. Most of these agencies have a nurse that assists with case management for children who have elevated lead levels; however, this nurse works in collaboration with the child's primary care physician, parent or guardian, managed health care plans if the child is enrolled, and environmental risk assessors. DHSS Healthy Indoor Environments and Childhood Lead Poisoning staff collaborates with LPHA staff on elevated lead cases to provide initial and ongoing technical assistance regarding lead case management activities, as well as environmental risk assessment. Lead poisoning education and outreach is often offered at the LPHA level at health fairs, through physician offices, childcare facilities and upon request. LPHA's utilize lead poisoning prevention campaigns to assist in raising community awareness regarding lead poisoning and its health effects. LPHA's are often a primary contact for parents of children attending childcare facilities where proof of lead testing is required. This is typically a convenient access point for lead testing and opportunity for provision of educational lead information to families as well. The DHSS Healthy Indoor Environments and Childhood Lead Poisoning Program also provides these agencies with educational materials and technical assistance for other related issues such as the use of the MOHSAIC application, lead case management training, current program and regulatory requirements. The support and ongoing efforts of the Local Public Health Agencies regarding childhood lead poisoning and its prevention play a key role in the primary goal to eliminate childhood lead poisoning.

For more information on lead poisoning prevention contact:

Missouri Department of Health and Senior Services  
Bureau of Environmental Epidemiology  
930 Wildwood Drive  
Jefferson City, MO 65109  
Phone: (573) 751-6102 or (866) 628-9891

Or visit our website at:

<http://health.mo.gov/living/environment/lead/index.php>